GROSVENOR LIBRARY,
BUFFALO, N. Y.

THE UNIVERSITY OF THE STATE OF NEW YORK
STATE EDUCATION DEPARTMENT

VOL. 20 APRIL 2, 1934 NO. 14

Photograph by Margaret DeM. Brown.
Courtesy of Dr Edith A. Roberts, Vassar College

The Use and Beauty of Trees in the Landscape

THEODOSIA BURR, LANDSCAPE ARCHITECT, POUGHKEEPSIE, N. Y.

What beauty there is in trees, beauty that has inspired our poets and artists, beauty that lasts all through the seasons! A single tree silhouetted against the sky, an avenue of trees along a road or lane, or the great groups of trees in the forests and woods, all have at some time made each of us say, "How beautiful!"

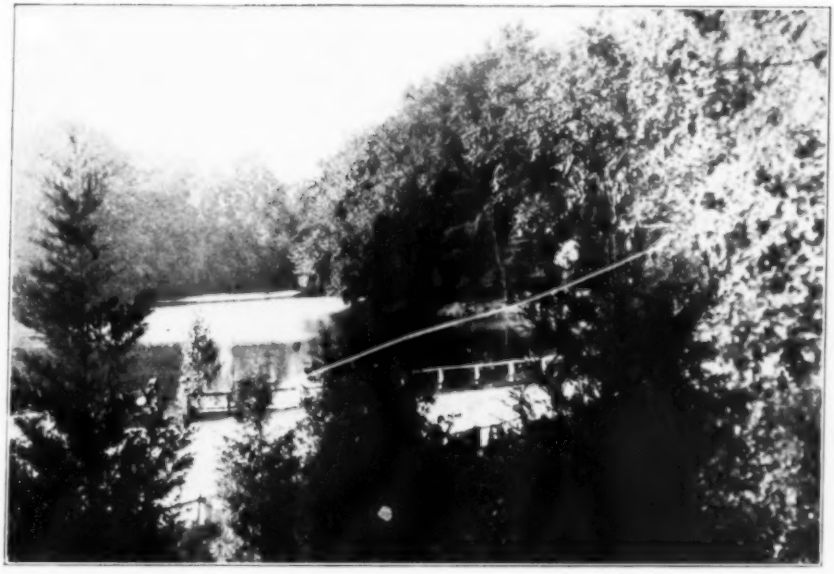
Great, also, is the utility of trees in the landscape. Their shade is of value to man during the hot season. This shade and the consequent moisture that is produced and conserved makes possible the growth of many of our shrubs and herbs. We all know, too, the beneficial value to the soil of a growth of trees.

It is this beauty and utility of trees which make them a most important factor in any landscape work, whether a garden, a park or a highway.

New York State, being in a natural forest area, is extremely wealthy in the number and variety of trees that are native, both evergreen and deciduous. With this wealth of native trees, it is not necessary to plant or introduce into the landscape any trees foreign to this region. We have but to study our trees and landscape and discover what gorgeous effects and combinations nature obtains. In this study of native trees and the plants which associate with the trees, we must note what habitat they require, that of the lowland or the upland, a streamside or a dry slope, a cold northern exposure or a warm southern one, a sunny place or a shady one. Trees, like human beings, develop best when they are in the right or natural environment. As we gradually appreciate and understand the natural or native plantings we can then, with imagination, recreate in our surroundings these same effects.

In creating a setting for our homes and gardens we can not be too lavish with the use of trees. Often a house is built close by a large tree or two, so that the sheltering branches cast flickering shadows over the house and its open terraces. From a distance we see the house seemingly hugging the earth under its leafy canopy and becoming a picture framed by the branches of the trees. Inside the house how lovely it is to look out through the leaves, to

Photograph by John Weiss, Inc.
Courtesy of Clarence Fowler, Landscape Architect
A Sun Dial Flower Garden



Photograph by Margaret DeM. Brown.
Courtesy of Dr Edith Roberts

A Roadside Improved by Planting

hear the wind rustling through them and to watch the birds and squirrels! As people begin to realize the joy of watching nature, they build their houses among the trees, or if not so fortunate they plant trees up close.

The entrance drive, or road or walk may wind through the trees or be a pleasant avenue of trees, and an entrance gate may be sentineled by a tree or two.

Elms with their high graceful branches are always associated with the fine, stately colonial homesteads of our ancestors, who generally built in sheltered valleys, while the sturdy, wide-spreading oaks are often a setting for houses on a hillside or houses of rugged stone and character. Maples give a dense cool shade to a garden or house, and in the autumn their flaming colors transform the landscape into a blaze of glory. Many of us know and love the fragrance of the pines outside our windows, and never forget the soft murmur of the wind through their branches.

The garden is often located in relation to some stately tree. This tree may be the central focal point or it may be in the corner where paths lead to it. To inclose a garden or a lawn, trees are planted as a background, with the smaller trees and shrubs which like the shade planted underneath. With such a dense wall of leaves, the garden and lawn become an inclosed outdoor room.

A flower garden that requires an open sunny location is always more attractive if, like a jewel, it has a beautiful setting. The setting or background of trees and shrubs gives a pleasing contrast between the light, sunny gardens and the dark shady inclosure, and between the low colorful tapestry of the flowers and the high green wall of the trees. Pines with a foreground of our flowering trees such as dogwoods, crabs and cherries, are often used.

A small terrace or garden where space is limited can accommodate our smaller trees, such as the birches, hornbeams or dogwoods. Even the picturesque and gnarled apple tree is a favorite.

There are many kinds of gardens, depending on the location and the trees. A group of trees, or a bit of woodland, of oaks, maples or beeches, if we are lucky in possessing these lovely silver

trees, may suggest a woodland garden full of flowers and cool green ferns. A path through the woods is delightful and full of interest, presenting an opportunity to use our native wild plants, and to attract bird and wild life. A small streamside planted with our water-loving trees, such as elms, sycamores and willows, becomes again the home of many shrubs and flowering herbs.

We can thus plant trees around our homes, our schools and our gardens, giving a beautiful setting to our own daily lives.

In our towns and cities we can readily see how useful are trees. When we hear that a town is beautiful, we immediately vision broad avenues of trees. Our forefathers knew their value, and we now have in many places avenues of fine old elms and maples. These can not last forever, and it is imperative, if we would keep or make our towns and cities beautiful and comfortable, that we take the interest to see that new trees are planted and care is taken of the old ones. An Arbor Day in every town and city is worthy of much consideration.

The problem of conserving trees and wild flowers is greatest along roads and highways. Roads pass through meadows that are a veritable garden of flowers; they skirt hillsides of cedars marching across the landscape like a company of tall soldiers. They cut through woods of oaks, dogwoods and flowering herbs and ferns, or through shaded glens with their towering maples, beeches and hemlocks. Where construction has destroyed this beauty it is possible to replant the native growth. These lovely scenes and natural landscapes are our heritage. They will fast disappear unless we arouse ourselves and champion their cause.

Let us grow up with a knowledge and a reverence for our trees which make our surroundings so useful and so beautiful.

Let Wild Flowers Grow

Preserve the Balance of Nature

HOMER D. HOUSE, STATE BOTANIST, NEW YORK STATE MUSEUM

> "In a great democracy of free people the protection of wild life and the preservation of all other natural resources, which underlie national prosperity and happiness, must depend finally, as does the stability of the government itself, upon the support and willing service of every citizen." — THEODORE ROOSEVELT.

Our attention has been directed most pointedly within recent years to the necessity for the conservation of all those natural resources which have to do with the economic life of the State and Nation. Not less important, perhaps, but from a different point of view, is the need of conserving and preserving those forms of wild life, particularly the wild flowers, which contribute so richly to the recreational value of the woods, forests and fields of this country.

To some persons the recreational value of the great out-of-doors depends upon fishing and upon hunting game birds and animals; but it is important to recognize also that even a greater number of persons derive the greatest value during their hours of recreation and vacation through the study of plant life, bird life and the habits of animals. It can not be denied that the study of nature is a powerful contributor to peace of mind, happiness, equanimity and a broader, more sympathetic outlook upon life.

The vacation playgrounds of New York State have a recreational value that should not be measured in money units. Measured by their indirect influence upon the lives and activities of those who enjoy the recreational advantages they afford, their value is tremendous. The truly amazing thing to remember in this connection is that this recreational value of our forests and the enjoyment to be obtained from the manifold forms of wild life are perpetual, recurring again and again, year after year.

Mayflower or Trailing Arbutus

generation after generation, as long as the forests shall endure and be protected by the willing cooperation of every citizen, both old and young.

The problem then is one of relative values. Most of the attractive wild flowers, like other forms of wild life, are dependent upon forest cover. Shall we realize an immediate and limited value by destruction, or shall we secure to the Commonwealth a perpetual and unlimited recreational value by the wise conservation of our forests and the forms of wild life dependent thereon?

There is another aspect of the situation, one which borders upon the economic. It is based on the fundamental and well-known fact that all of the elements of nature are closely interwoven and interdependent and that the loss of even a part of one entails the corresponding loss of the others. It is easier to destroy plant life than any of the other forms of wild life. The result is that the so-called "balance of nature" is seriously disturbed and that all animals, including the birds dependent for food upon the destroyed plants or upon the insects associated with the destroyed plants, must also disappear by death or by retreat to regions still primeval. The destruction or wholesale gathering of wild flowers disturbs the balance of nature, and their place is taken by weeds. There must follow a change in the insect and bird life, and in this readjustment some kinds of insects, animals and adventive plants become pests, accomplishing great damage, and cause the expenditure of large sums of money for control measures.

The automobile is a great factor in our modern life for pleasure and for good, but it is also a great factor in the more rapid destruction of wild life, especially wild flowers, for it

places them within easy reach of those thoughtless persons who can not be satisfied with seeing wild flowers at home in their incomparable surroundings but who needs must uproot, break down and gather them by the armful. The only satisfaction to be gained is a few brief hours of doubtful pleasure which the flowers may yield from bowls and vases. They then go to join the despised contents of the garbage can. Where they formerly grew in the woods their beauty will not delight the passerby again for many years or perhaps never again in that spot if the destruction was sufficiently complete. By such methods have many of our byways and woodlands, formerly so attractive with their wealth of true Americans, become the abiding place of burdock, thistle, mustard, ragweed and numerous other obnoxious aliens.

Even more regrettable is the fact that the disturbance does not end with the change of plant life. The insect, animal and bird life also suffer a marked change, adding nothing to the attractiveness of such byways and woodlands.

The picking of such plants as the white daisy, the yellow daisy, the buttercup, the goldenrod and the autumn aster may be a benefit as well as a pleasure, since they are often objectionable meadow or roadside weeds. They are plants that have prospered amazingly with the clearing of the forests; and even though they are wild flowers, and very attractive ones, it is scarcely imagined that they can suffer from vandalism. For ornamental purposes they certainly are superior to some of the rarer wild flowers that are so greatly in need of protection.

The list of wild flowers that have suffered most from the overzealous admirers is a long one, but space need be taken to mention only a few of the most important. They are showy lady's-slipper, moccasin flower, rose pogonia, trillium, fringed gentian, azalea, mountain laurel, dogwood, hepatica, adder's-tongue or dogtooth violet, arethusa, mertensia or bluebell, white water lily, trailing arbutus, American lotus and anemone or wind flower. To this list I am sure almost any lover of wild flowers could easily make a great many additions.

Albert A. Hansen, of Purdue University, has recently offered the following suggestions which if followed will result in adequate protection to the wild flowers:

1 Always allow sufficient flowers to remain to mature seed and so perpetuate the species.

2 Allow the roots and other underground parts to remain undisturbed. To do this the use of a pair of scissors or a knife is advisable.

3 Never tear out the creeping stems of plants such as ground pine and arbutus. The flowering stems of arbutus may be picked with impunity if the creeping stem is left undisturbed.

4 Discourage the decorating of houses and churches with ferns, evergreens (such as ground pine) and so on.

5 Pick an abundance of daisies, chicory, wild asters, buttercups and other handsome but troublesome plants. Many weeds produce beautiful flowers.

6 Start a wild flower garden. Seeds should preferably be used for this purpose.

7 If you are a school teacher substitute cultivated plants for rare wild plants in school work whenever practicable.

8 If you own woodland property set a few acres aside as a wild life preserve.

9 Never pick more flowers than you really need; leave some for the next person in case there is an abundance. Remember that wild flowers look best in their natural surroundings and rarely make good bouquets. Most wild flowers wilt in a few moments.

10 Do not burn woodlands in order to be rid of the dead leaves in the autumn. Allow these leaves to decay and furnish a natural fertilizer and needed winter protection for the flowers.

11 Do not break off the woody stems of flowering dogwood or other flowering shrubs and trees. To do so will expose the plants to the attack of fungi which may eventually cause death. If branches must be had, sever them with a sharp knife close to the base of the branch.

12 Do not purchase wild flowers from florists or bunches of rare wild flowers from children or street vendors.

A few of the eastern states have enacted laws which aim to protect certain rare plants, but it must ever be recognized that human conduct is difficult to control by law. Education looking toward the right estimation and preservation of our diminishing forms of wild life offers a far more encouraging method for the conservation of wild life for the future generations as well as for our own enjoyment through the future years.

Courtesy of State Conservation Department

Boys from a C. C. C. Camp Uprooting Currant and Gooseberry Bushes Which Act as Host to the White Pine Blister Rust

Saving New York's Trees from Their Enemies

JOHN T. GIBBS, DEPUTY COMMISSIONER OF CONSERVATION, STATE OF NEW YORK

A tree is a living thing and like all vital organisms is subject to a bewildering variety of ailments. Like a human being, it may be killed by germs, weakened by diseases, attacked by violence or struck by accident. It may find its environment uncongenial and wither away. It may harbor sap or bark-destroying fungi and die as it stands. It may be set upon by swarms of insects and its leaves eaten away, so that it is destroyed or permanently warped and stunted. Or it may be consumed by fire.

All these things happen to trees in the State of New York. It is the duty of the Conservation Department to combat tree-destroying agencies of all kinds, foremost among them being fire. Since the manner in which forest fires are fought has been described previously in these pages, there is little need to dwell further upon this topic at this time. What we are more particularly concerned with in this article is the more subtle enemies of our trees.

Last year I related in this Bulletin the story of the gipsy moth and told how New York, with great effort and considerable expense, had managed to keep this destructive insect away from its borders and to save millions of its trees from suffering the same fate as those of New England. In this article I shall tell of relatively less successful activities, just as earnestly pur-

(Continued on page 161)

The University of the State of New York
Bulletin to the Schools

Issued semimonthly during the school year by the State Education Department

CHARLES F. PROBES, *Editor*

This bulletin is sent without charge to all schools and educational institutions of the State. To others it will be mailed postpaid for 50 cents a year, 5 cents for single copies.

Entered as second-class matter September 30, 1914, at the post office at Albany, N. Y., under the act of August 24, 1912. Acceptance for mailing at special rate of postage provided for in section 1103, act of October 3, 1917, authorized July 19, 1918.

APRIL 2, 1934

Arbor Day Proclamation

The laws of the State have delegated to the Commissioner of Education the responsibility for fixing the time of the annual observation of Arbor Day. Each year I find this a congenial and pleasant duty, for it is at all times a good thing to turn our thoughts to the many blessings that Nature has showered upon us. And in these days, distressed as we are by the conditions that confront us, we are especially grateful to find in the eternal miracle of spring the comfort and solace, the courage and hope that better days lie ahead.

When snows lie deepest and the blasts of winter are most severe, we know that at the proper time all will be green and fair again, that blossoms will appear on branch and bush and the songsters of the air will return to cheer us with their happy notes. A winter of hardship and suffering is then ended. A springtime of the enjoyment of Nature's bounty begins.

To partake of these blessings is the privilege of all. They are spread for us with lavish hand. To give as well as to receive these blessings is also our privilege, so that those who come after us may, like us, find sustenance for physical needs and the joy that comes from companionship with tree and flower and every living thing. So we plant trees on Arbor Day and care for them, and commemorate in our programs the infinite goodness of Nature.

Therefore, April 20th, April 27th and May 4th are herewith designated as Arbor Day, and with local school authorities is placed the responsibility to determine which date will best serve each community, and to conduct such programs as are agreeable and fitting.

May we find in this year's observance of Arbor Day the peace and the happiness that come from working in harmony with Nature and from contemplating the many benefactions she has bestowed upon a weary but hopeful world.

FRANK P. GRAVES
Commissioner of Education

—o—

A Woodcraft Game

This contest or game is suggested for scout groups and school classes to stimulate interest and quick thinking in the identification of trees and plants. The chief requisite is a leader well acquainted with trees and plants both in winter and summer condition, and enthusiastically devoted to imparting that knowledge to others.

Equip each member of the group with a small pad and pencil. On the first sheet write the numbers one to ten down the left-hand border. The leader afield with the group sees a fallen leaf on the ground. It is number one. "What kind of a leaf is it?" Write the answer quickly because number two is a large tree some distance away and must be named from the spot at once, as number three, perhaps a wild flower close by, is indicated almost immediately. A piece of split firewood lies in the woodland road. It is number four. "What kind of wood is it?" So the game goes quickly on with trees, leaves, fruits of wild trees, wild flowers etc. until number ten is reached and identified.

The leader should then stop and read over the correct answers to the ten numbers. Each member of the party should write the number of correct answers and his name on the sheet and hand it in. When ten sheets, or one hundred identifications, have been made the contest can be closed for the time being, and it is but a matter of a few moments to reckon the relative standing of each member of the group. The course can then be retraced and some of the more difficult items examined with greater care and their identifying characteristics pointed out.

Saving New York's Trees from Their Enemies

(Continued from page 159)

sued but not so completely crowned with triumph as the gipsy moth campaign.

We in the Conservation Department are principally concerned with the menaces to our forest trees, especially those of the coniferous or evergreen variety, such as the spruce and the pine. We have no jurisdiction over agriculture and therefore are not equipped to fight the enemies of fruit trees. So the discussion here is of forests, not orchards.

How are human beings kept healthy? Why is it that many scourges which afflicted humanity in past ages, such as smallpox, typhoid, yellow fever, bubonic plague and leprosy, have almost vanished and no longer sweep away multitudes in epidemics? Because science has studied their causes and conquered their effects. Because devoted bands of men in every country on earth have given their lifetimes to work in laboratories, or have ventured for long years into jungles, or have experimented endlessly and often anonymously. Because in addition to the actual treatment of the sick, medical science has indulged in extensive research.

In conquering disease among animals or among plants, just as much research is needed in proportion. It is therefore no use for us to try to conquer the enemies of trees without knowing how. Consequently a considerable part of the Conservation Department's war on tree destruction consists of what we call forest investigations. Whenever a new menace appears, we do not dash about cutting down trees. We find out what the new enemy is, how it acts and what is the best method of destroying it.

Aside from the gipsy moth, which was described last year, the most persistent enemy of our forest trees in this State is the white pine blister rust. Unlike the moth, this is not an insect but a fungus growth, which attacks only white pine. For some years the Department has been studying the destruction of pine trees because of the ravages of this fungus and has at length developed a method of eradication, which amounts to prevention rather than cure.

When a tree is sick it does not summon a doctor as humans do. It just stands there and dies unless its illness is discovered. Therefore a primary requisite of fighting the trees' enemies is to scout through forests for traces of them, or for their effects. A very large part of all our forest pest and disease eradication consists of this scouting. This sometimes leads to criticisms. We will engage men for scouting and they will work hard for many days without any result whatever — the common fate of all engaging in any scientific inquiry. Frequently taxpayers will protest against this expenditure of public funds. Often the men actually engaged in the work, if not sufficiently imbued with the scientific spirit, will themselves rebel against such employment which involves so much hard work without any apparent results. But it is absolutely necessary. If it is not done, tree epidemics will spread and destroy large areas before they are discovered.

But to return to the blister rust. It is necessary to do considerable scouting to discover the prevalence of this ailment. Once it is discovered, however, it may be eradicated quickly because of our knowledge of this fungus. It has been found that the rust can not be communicated from one tree to another, but must be blown by the wind from a diseased tree to a currant or gooseberry bush, where it renews its vigor and is blown later to another pine tree or group of trees. All that is necessary to save the trees is to get rid of all currant and gooseberry bushes within a half mile of any infected stand.

There are many millions of currant and gooseberry bushes in New York State. If they could be eliminated entirely, there would be no more white pine blister rust here. Naturally, complete eradication is impossible, as many are located in extremely remote regions in thick forests. Wherever the blister rust is found, however, Conservation Department crews are dispatched immediately to eradicate the currant and gooseberry bushes. By this method the spread of the disease is checked in many areas.

The blister rust, however, still rages in this State. It is constantly appearing in new areas both on public and private lands. There can be no diminution of activity in the war against it. Merely eradicating currant and gooseberry bushes does not destroy them for all time. In a few years, their roots may sprout again.

But the blister rust is being slowly starved out. It is going to be a long process and for many years to come, it is feared, the fight must continue. These ailments can not be exterminated at one blow, any more than tuberculosis can be stamped out from the human family

by one crusade. The fight goes on endlessly, as does the war against human disease, with science slowly winning.

Some other ailments which affect our forest trees are the ravages of the European pine shoot moth, the white pine weevil, the balsam canker, the staghead of red pine and resinosis disease. Each of these is being extensively studied in the Conservation Department's nurseries and in the field, as well as in the laboratories. For each there is a different remedy; for some there are remedies yet to be developed.

Effects of the White Pine Weevil on White Pine Shoots

Of perhaps more interest at present than any other tree ailment is the Dutch elm disease. This is not primarily a forest tree disease, as elms are more extensively used as shade trees, lining our city streets and filling our parks and private estates. Therefore the duty of combatting this menace does not necessarily fall upon the Conservation Department. In fact, the Legislature, at the time this is written, has made no appropriation for the war on this disease and has not indicated whether it would like New York's battle to be waged under the standard of the Conservation Department or that of the Department of Agriculture and Markets.

To date, therefore, nothing has been done by this State to study or eradicate this disease, except such inquiries and experiments as have been made by the State College of Forestry at Syracuse University and the State College of Agriculture at Cornell. All the preliminary work on the Dutch elm disease has been done by the Federal Government and as yet no successful method of combatting or eradicating it has been developed.

This is a matter, however, in which no time should be lost. While the Dutch elm disease might not be as destructive as some other ailments, its ravages will naturally be much more apparent to the public. A forest tree epidemic might rage for years before its effects would be generally noted because most of the trees would be hidden in deep woods in remote places. This is not true of any ill besetting the elm. You will find the elm lining many streets of our cities and villages, in our parks and on most private estates. Immediately the elm is attacked, the destructive effects will be visible to city dwellers and park frequenters. Imagine our New York scene if the elm should disappear as has the chestnut! Our landscape would appear denuded. It is therefore more vital from an esthetic standpoint to save the elm than it is to save the spruce or pine.

Constructive Conservation in an Out-of-Door Laboratory

DR EDITH A. ROBERTS, DEPARTMENT OF BOTANY, VASSAR COLLEGE

In these days when the cost of equipment must be kept down, why not start an out-of-door laboratory for constructive conservation? By constructive conservation, I mean a conservation that allows us to have all of any plant we wish provided we raise it ourselves. Why should we not have all the dogwood trees we wish, if they grow naturally near our schools, provided we learn to grow them and we raise our own?

The following information was learned about the growing of dogwood from seeds in 1925. The accompanying picture shows an entrance to an out-of-door laboratory in 1931 through dogwood plants which were started as seed in the fall of 1925.

Flowering Dogwoods

How They Grow in Nature

Dogwood seedlings are found along walls and fences where leaves have drifted and formed a mulch. They seldom appear in more open places where the seeds are exposed to unfavorable temperatures below freezing and where they are more accessible to the birds and squirrels, who enjoy dogwood seeds for breakfast.

Photograph by Margaret DeM. Brown

Entrance to an Out-of-Door Laboratory through Dogwood Plants Which Were Started from Seed in the Fall of 1925

How To Gather the Seeds

Collect the berries before the squirrels or birds do. In a bowl with a very little water mash the berries carefully with a potato masher to remove the pulp without injury to the seed. Then dry a little and rub them well in a cloth bag until the pulp is entirely removed.

How They Can Be Grown for Your Garden

Out of doors

Plant them immediately about one inch deep in garden soil. Just before the ground freezes cover them with a heavy mulch. Nothing is better than leaves. The following spring seedlings will appear from about half the seeds.

In your ice-box

Place the seeds in a tin box with a loose lid or ventilation hole, putting two to three parts of clean sand, slightly moistened, with one part of seeds. Place in the ice-box. At the end of four months the seeds can be spread on a paper and those with breaking seed coats removed and planted in flats or pots. This can be repeated each week until about three-quarters, probably, have germinated. The flats and pots must be carefully guarded against such enemies as insects and fungi which are overly fond of dogwood seedlings.

The plants in a constructive conservation plant laboratory would vary with the part of the State in which the school is located, but the idea behind the laboratory would be the same; namely, the growing in it of trees, shrubs and herbs that are native to the region near the school. In some instances where roads are to be cut through or land cleared for some other purpose, the plants could be saved by being moved into such a laboratory. This certainly would be conservation. If at the same time seeds were gathered and experiments were made in germinating the seed and raising the seedlings, more of these plants could be had.

Any school in New York State has close at hand a sufficient number of attractive trees, shrubs and herbs to make such a laboratory a garden in the real sense of the word. I know of no better way to teach conservation than to teach how to grow the plants one likes best to see in the open. Mountain laurel, arbutus, cardinal flower and marsh marigold may be grown from seed. Try some that you know how to grow from seed or that can be propagated from cuttings, as partridge berry and *Lycopodium lucidulum*. Try some that you do not know how to grow, but see if the pupils can find out how to propagate them.

Later arrange your plants in the way they grow naturally, but first learn how to grow them, so that you may have all you wish without destroying the beauty of the countryside. You may thus practise constructive conservation. We have here in Dutchess county such a laboratory, in which we have arranged the plants in their natural or ecological groupings. An account of the development of this plant laboratory will be sent to any school wishing to try such an experiment.

The Civilian Conservation Corps and the Forests

WILLIAM G. HOWARD, DIRECTOR, LANDS AND FORESTS, STATE CONSERVATION DEPARTMENT

The boys of the Civilian Conservation Corps, or, as it is popularly known, the C. C. C., were a familiar sight along the roads in the forest regions of the entire country during the summer of 1933. Not only were these boys traveling the highways to and from camp, but some of the work projects conducted by the State Conservation Department consisting of the building of fire lines and the removal of slash to lessen the fire hazard along these roads, gave the public a chance to see the C. C. C. boys both at play and at work.

While much has appeared in the news papers about the work of the C. C. C. camps, I doubt whether the public generally understands the way in which the idea for these camps originated, or realizes the full scope and possibilities of the movement. The idea itself originated in President Roosevelt's own mind, and some things he told me in a talk I had with him in December 1932 indicated that even as early as that he was making plans for doing this type of forest work. The President took steps as soon as he assumed office in Washington to put these plans into effect, and the act providing for the C. C. C. was approved on March 31, 1933, less than a month after Inauguration Day.

The expense of the Emergency Conservation Work, which is the official title applied by federal authorities to the C. C. C. movement, has been financed by unexpended balances of federal appropriations, which under the terms of the enabling act the President was authorized to impound for this purpose.

One of the astounding things about the C. C. C. movement is the rapidity with which camps were established and nearly 300,000 men enrolled and put to work. Although the act was not approved until March 31st, conferences were held in Washington early in April, a director of Emergency Conservation Work, Robert

Courtesy of State Conservation Department

C. C. C. Workers Rip-rapping the Shore of an Island in Lake George

Fechner, was appointed and his advisory board set up. This board consisted of one representative each from the Department of Labor, the Army, the Department of Agriculture and the Department of the Interior. Each of the agencies represented on the board had its own particular function to perform.

The Department of Labor, acting in our State through the Temporary Emergency Relief Administration, determined the method of selecting the men and adopted the policy that only men between the ages of 18 and 25 years who were in need of relief and who would agree to allot at least $25 of their monthly pay of $30 to their families, should be selected for the corps.

The Army was given the job of examining and enrolling the men as fast as they were selected. After selection, the Army proceeded to condition the men in so-called conditioning camps at army posts, and upon completion of that task assigned each man to a work camp. The Army also had imposed upon it the duty of setting up and operating the work camps at sites agreed upon with the work agency, which in our State is the Conservation Department.

The Department of Agriculture was represented on the Advisory Board by the Chief of the United States Forest Service, because of the fact that most of the work to be done by the corps was to be on national forests or on state forest problems under the direction of the state forester or similar officer.

The Department of the Interior had as its representative on the council the director of the National Park Service, because of the many projects laid out for the corps on national and state parks. In the case of the latter, the work projects were under the direct supervision of the state park departments or regional state park commissions, as in our case.

The work projects themselves were recommended by the United States Forest Service and the National Parks Service, and required the approval of Mr Fechner. In the case of New York State forest and park projects, applications were filed by the Conservation Department with the United States Forest Service or the National Parks Service, as the case might be.

It was decided to have the standard camp one which would contain 200 C. C. C. boys. To these were added some forty so-called local woodsmen recruited from men out of work in the locality within which the camp was located. As I explained before, these camps were established and operated by the Army. The work project, however, was supervised directly by representatives of the Conservation Department, provision being made for a superintendent and several foremen at each camp. These supervisory forces assumed charge of the men as soon as they left the camp for work.

New York State during the summer had 33 camps, consisting of 18 devoted to various branches of forestry work, 14 on state park work and one on a town park project. Of the forestry projects, five pertained to forest fire control, such as the elimination of fire hazards, construction of so-called truck trails, slash disposal and similar activities; four camps were engaged in the construction and improvement of public camp sites; three were primarily engaged in gipsy moth control; three in blister rust control; two on the improvement of lands used for education in forestry; and one on the improvement of State Reforestation Areas.

It would take a long time to recount in detail the various types of work carried on, but a statement of the outstanding accomplishments of the 18 forestry camps in this State during the summer season up to November 1st, will give an idea of what was done:

Three new public camp sites were cleared, and five existing camp sites were greatly enlarged

Forty-three miles of truck trails were built, which will permit our fire trucks to get to remote areas of forest land

Forty-nine miles of foot trails have been put through

Seventeen miles of bridle paths have been cleared, suitable for either pedestrian travel or horses

Seven million trees were planted on the State Forest Preserve and State Reforestation Areas

Fifty-five trail bridges were built

Forty-eight miles of fire lines were cleared

Slash was removed from 116 acres of State land, mainly adjacent to main highways where the fire hazard was greatest

Thirty-two thousand acres of white pine was protected by the eradication of currant and gooseberry bushes to prevent the spread of white pine blister rust

One hundred thirty thousand acres were scouted for gipsy moth

Ten miles of telephone lines were built

Improvement cuttings were made on 89 acres of woodland

Courtesy of State Conservation Department

Civilian Conservation Corps Camp at Arietta

Besides these specific accomplishments, many others might be listed which have resulted in improving state forest and park areas.

It has been most interesting to note the attitude of the public towards the C. C. C. camps. When the camps were first established, considerable fear was felt in the communities that the boys in these camps might prove to be a nuisance, and that they might be responsible for creating disorder in neighboring villages. The best evidence that this was a mistaken idea is that when the time came to plan for camps for the winter, we were besieged with applications from nearly every community where a camp had existed during the summer to keep the camp there during the winter season. As a matter of fact, the number of camps in the winter was increased over those maintained during the summer months by the addition of 14 more projects, making the total of winter camps 47. Some changes had to be made for the carrying on of winter work, because certain projects, particularly in the Adirondacks, could not be carried on effectively during the winter months, and the C. C. C. camps working on those projects were transferred to other jobs that could be done. Incidentally, some half dozen fish and game projects were approved, including the improvement of game refuges and at least one game farm and the carrying on of work at one of the state fish hatcheries, and work is progressing on these projects at the present time.

When we come to summarize the results of six months or more experience with the C. C. C. camps, we appreciate that while we may not have accomplished as much in the way of work as we might have expected, the benefits resulting from these camps have more than justified the experiment. In the first place, the advantage of taking a quarter of a million boys off the streets and giving them an opportunity to do healthful work in the open, under at least some form of discipline, has done wonders to improve the morale of those boys. I venture to say that their opportunities for making good in whatever employment they may obtain in future years are improved many fold by their experience in the C. C. C. camps.

From the point of view of accomplishment, it is no exaggeration to say that the activities

of the C. C. C. camps have made it possible to advance certain phases of forestry work many years beyond what would otherwise have been possible. Many jobs have been done for which regular appropriations would probably never have been made. Other tasks have been accomplished and are being accomplished at the present time that in the normal course of events would have had to be deferred for from five to ten years.

The more experience we have with the C. C. C. camps, the better we realize the opportunities for using them to carry out worth while projects, and we are looking forward to the continuation of these camps at least another six months. In fact, it is rumored that these camps might be made a permanent feature, and if such is the case, I can say frankly that we can undoubtedly make good use of a number of these camps for many years to come in carrying on forestry work in this State.

The Dutch Elm Disease

H. D. HOUSE, STATE BOTANIST, NEW YORK STATE MUSEUM

After the almost complete destruction of the chestnut trees in the eastern United States by the chestnut blight, we are now threatened with another serious tree disease known as the Dutch elm disease, which attacks all species of elms. It is more than a mere threat, because the disease has already appeared in New Jersey and the vicinity of New York City as well as in Ohio.

The Dutch elm disease (*Graphium ulmi*), so named because it was first found in Holland, made its first appearance in this country near Cincinnati in 1930. Approximately 400 diseased trees have been found in northern New Jersey and near New York. It is believed that the disease reached this country on imported elm logs which were infected with the disease and also infested with the elm bark beetle (*Scolytus*), which are probably carriers of the disease from infected trees to new areas.

The first sign of the disease is the sudden wilting of the leaves on certain branches. The foliage may turn yellow and brown before falling or may dry green upon the affected branches. The entire tree may become infected and die or the process may extend over successive seasons. Drought or other causes may produce similar symptoms. The fungus causes a ringlike or spotted brownish discoloration in the outer layers of the sapwood, and these discolorations may be best seen by cutting the suspected twigs obliquely or longitudinally. Positive identification can not be made in the field. When the presence of the disease is suspected small twigs about the size of a lead pencil and about six inches long should be cut and sent to the Dutch Elm Disease Laboratory, Wooster, Ohio, with information regarding the source of the sample and the name and address of the sender.

The seriousness of the situation is proved by the ravages of the disease on the elms of Europe. Most of the beautiful elms bordering the highways of Belgium, Holland and parts of Germany as well as those along the avenues of Versailles, and in some sections of England have been killed by the disease. The American elm is our premier shade and ornamental tree. Other trees are taking the place of the chestnut where it was killed by the blight in our forests. Other evergreens may replace the white pine if it falls a prey to the white pine blister rust, but what can take the place of the stately elms along the streets and highways of New England and New York?

From what has happened in Europe it is evident that nothing should be left undone which may check and eradicate the disease in this country before it gets out of control. Since it appears probable that the Scolytus, or elm bark beetle, may be largely responsible for the spread of the disease the most obvious thing to do is to see that all dead, dying or fallen limbs, branches, trunks and stumps of the elm, which offer the best breeding places for the beetle, be gathered and burned. In this case, as in that of many diseases of mankind, good sanitation may be the best means for control. In areas where diseased trees have been found this work should be particularly thorough and efforts should be made by local authorities to enlist the aid of C. C. C. groups in cleaning up all dead or dying elm tree parts.

Allegany School Offers Natural History Courses

The Allegany School of Natural History will conduct its eighth session beginning July 5th and ending August 24th. The school is located in the Allegany State Park south of Salamanca and is the only outdoor school of its kind in the State where work of college grade is given in the woods.

The school was established to meet the need for outdoor study and training in the study of natural history. The central principle of instruction is to guide the student in personal observations in the field, in studies in the laboratory and in reading with a view to enabling him to develop powers of observation, thought and judgment.

Field courses are given in botany, zoology, geology, birds and nature study. In addition, the facilities of the school are available to a limited number of advanced students and specialists who wish to pursue researches appropriate to the region.

The director of the school is Dr Robert E. Coker, professor of zoology at the University of North Carolina, and the dean of women is Mrs Coker. Doctor Coker also gives courses in field zoology. The courses in field botany will be given by Dr Robert B. Gordon, of Ohio State University; in field geology, by Gordon I. Atwater, of the University of Iowa; in the natural history of birds, by Aretas A. Saunders, field naturalist of the New York State Museum; and in nature study by William P. Alexander, field naturalist of the Buffalo Society of Natural Sciences.

The school is conducted by the Buffalo Society of Natural Sciences in cooperation with the New York State Museum and is affiliated with the University of Buffalo, which gives college credits for courses taken at the school.

Registration should be completed before June 15th. Application should be made to Dr Robert E. Coker, Chapel Hill, N. C. A circular of information gives full details as to equipment needed by each student. The cost of tuition, board and lodging is $135 for the session.

In the January 1934 issue of High Points in the Work of the High Schools of New York City, Agnes H. Bennett, a teacher in Girls High School, wrote as follows of the Allegany School of Natural History:

I think that many city people would like the Allegany School of Natural History, if they only knew about the place, but since it is located in Allegany State Park, in the western part of New York State, few of us have been there. Many heads of departments have received leaflets which describe the field courses offered in the various branches of science; they describe also the camp life, but when you see the camp site by Quaker lake, and meet the director, Doctor Coker, the other members of the faculty and the students, you sense a charm which can not be fully expressed in any descriptive booklet.

Since field tests have become a part of the regular examinations for biology in the city schools, this place would interest candidates for examinations. Teachers who expect to do summer work for alertness credit would find this spot a pleasure as well as a duty. (You do not have to be a teacher to come here, but I think science teachers would like it.) The Allegany School of Natural History is conducted by the Buffalo Society of Natural Sciences in cooperation with the New York State Museum and is affiliated with the University of Buffalo.

From a vacation point of view, the school appeals because of the outdoor life and the high altitude with its cold nights. There is always something doing. Field trips come regularly; on Sundays there may be special trips to points of interest; Saturday night means campfire; on Wednesday nights there is a lecture by some member of the faculty or some one from outside on a topic of general interest. Tournaments in ping-pong and horseshoes developed spontaneously toward the end of the season. All this is fun.

The work is thorough. Classes are small; all courses take weekly field trips, sometimes spending the entire day from eight to five with a picnic lunch. There are laboratories where the material collected is classified and studied, with the help of the instructors. Independent work receives supervision.

A198m-Mr34-14,000(12020)

UNIVERSITY OF THE STATE OF NEW YORK PRESS